

1 We claim:

1 1. A method of producing a light reflective coating on a surface of a substrate, comprising:

2
3 a) applying flakes of dry non metallic reflective material to the surface so that the flakes lie
4 substantially parallel with the surface, wherein the non metallic flakes have a mean index of
5 refraction.

1 2. The method of claim 1, wherein the step of applying flakes to the surface comprises:

2
3 i) applying the flakes of dry non metallic reflective material to the surface; and
4
5 ii) mechanically working the surface to align the flakes parallel with the surface.

1 3. The method of claim 1, wherein the step of applying flakes to the surface comprises:

2
3 i) applying an electrical charge on the flakes of dry non metallic reflective material; and
4
5 ii) attracting the flakes to the surface using an electrical field substantially perpendicular to the
6 surface, whereby the flakes strike the surface and align parallel with the surface.

1 4. The method of claim 1, further comprising a step of covering the flakes with a protective layer.

1 5. The method of claim 4, wherein the protective layer has an index of refraction which matches
2 the mean index of refraction of the flakes.

1 6. The method of claim 1, where the flakes are interference reflectors.

1 7. The method of claim 6, wherein the flakes are flakes of CLC material.

- 1 8. The method of claim 7, wherein the flakes of CLC material have a non linear pitch distribution
- 2 so that the flakes reflect a broad band of light.
- 1 9. The method of claim 6, wherein the flakes are flakes of multilayer polymeric material.
- 1 10. The method of claim 9, wherein the flakes are flakes of multilayer polymeric material, where
- 2 the multilayer polymeric material has a non linear pitch distribution.
- 1 11. The method of claim 6, wherein the flakes are flakes of multilayer inorganic material.
- 1 12. The method of claim 11, wherein the flakes of multilayer inorganic material have a non linear
- 2 pitch distribution so that the flakes reflect a broad band of light.
- 1 13. A method of producing a light reflective coating on a surface of a substrate, comprising:
 - 2
 - 3 a) applying a coat of binder material to the surface; and then
 - 4
 - 5 b) applying flakes of dry non metallic reflective material to the surface, the non metallic reflective
 - 6 flakes having a mean index of refraction.
- 1 14. The method of claim 13, further comprising:
 - 2
 - 3 c) mechanically working the surface to align the flakes parallel with the surface.
- 1 15. The method of claim 14, wherein the step c) is a step of rolling the surface.
- 1 16. The method of claim 14, wherein the step c) is a step of buffing the surface.

- 1 17. The method of claim 14, where the substrate is a fingernail, and where the non metallic
1 reflective flakes are interference reflectors.
- 1 18. The method of claim 14, where the substrate is an automobile body, and where the non
2 metallic reflective flakes are interference reflectors.
- 1 19. The method of claim 13, wherein the step of applying the flakes to the surface employs flakes
2 having electrical charges on the surfaces of the flakes.
- 1 20. The method of claim 13, wherein the step of applying the binder material to the surface is a
2 step where the binder material is applied in a pattern, and where the flakes adhere to the
3 surface only where the binder material is applied to the surface.
- 1 21. The method of claim 20, wherein the step of applying the binder material to the surface is
2 performed using an ink jet printer.
- 1 22. The method of claim 20, wherein the step of applying the binder material to the surface is
2 performed using a screen printer.
- 1 23. The method of claim 20, wherein the step of applying the binder material to the surface is
2 performed using an offset press.
- 1 24. The method of claim 20, wherein the step of applying the binder material to the surface is
2 performed using xerographic printer.
- 1 25. The method of claim 13, wherein the binder material is a fluid material.
- 1 26. The method of claim 13, wherein the binder material is a fusible material.

- 1 27. The method of claim 13, wherein the binder material is a radiation curable material.
- 1 28. The method of claim 13, wherein the binder material is a thermally curable material.
- 1 29. The method of claim 13, wherein the binder material is a contains a volatile solvent.
- 1 30. The method of claim 13, wherein the flakes are interference reflectors .
- 1 31. The method of claim 30, where the flakes are flakes of CLC material
- 1 32. The method of claim 30, wherein the flakes of CLC material have a non linear pitch
2 distribution so that the flakes reflect a broad band of light.
- 1 33. The method of claim 30, wherein the flakes are flakes of multilayer polymeric material.
- 1 34. The method of claim 33, wherein the flakes are flakes of multilayer polymeric material, where
2 the multilayer polymeric material has a non linear pitch distribution.
- 1 35. The method of claim 30, wherein the flakes are flakes of multilayer inorganic material.
- 1 36. The method of claim 35, wherein the flakes of multilayer inorganic material have a non linear
2 pitch distribution so that the flakes reflect a broad band of light.
- 1 37. The method of claim 13, wherein the binder layer has an index of refraction which matches the
2 mean index of refraction of the flakes.

1 38. An object having a surface, comprising:

2
3 a first layer of a large plurality of dry non metallic reflective flakes, the non metallic reflective
4 flakes lying substantially parallel with the surface and substantially coplaner with each
5 other, the non metallic light reflective flakes having a mean index of refraction; and
6
a second layer of a binder material in contact with the first layer and with the surface.

1 39. The object of claim 38, wherein the flakes are closely adjacent the surface of the object and
2 wherein the binder material is adherent to the surface of the object and covers the flakes.

1 40. The object of claim 39, further comprising a protective third layer covering the first and
2 second layers.

1 41. The object of claim 40, wherein the protective layer has an index of refraction which matches
2 the mean index of refraction of the flakes.

1 42. The object of claim 38, wherein the binder material is adherent to the surface of the object, and
2 wherein the flakes are separated from the surface by the binder material and adherent to the
3 binder material.

1 43. The object of claim 42, further comprising a protective third layer covering the first and second
2 layers

1 44. The object of claim 43, wherein the protective third layer has an index of refraction which
2 matches the mean index of refraction of the flakes

1 45. The object of claim 38, wherein object is a part of an automobile body.

- 1 46. The object of claim 38, wherein object is a sheet.
- 1 47. The sheet of claim 46, wherein the flakes form a pattern.
- 1 48. The object of claim 38, wherein the flakes are flakes of CLC material.
- 1 49. The object of claim 48, wherein the flakes of CLC material have a non linear pitch distribution
2 so that the flakes reflect a broad band of light.
- 1 50. The object of claim 38, wherein the flakes are flakes of multilayer polymeric material.
- 1 51. The object of claim 50, wherein the flakes are flakes of multilayer polymeric material, where
2 the multilayer polymeric material has a non linear pitch distribution.
- 1 52. The object of claim 38, wherein the flakes are flakes of multilayer inorganic material.
- 1 53. The object of claim 52, wherein the flakes of multilayer inorganic material have a non linear
2 pitch distribution so that the flakes reflect a broad band of light.
- 1 54. The object of claim 38, wherein the binder material has an index of refraction which matches
2 the mean index of refraction of the flakes.